

PATENT COOPERATION TREATY

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From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

WRITTEN OPINION (PCT Rule 66)

To:

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Date of mailing
(day/month/year)

15.04.2005

Applicant's or agent's file reference
MDX,001-PCT

REPLY DUE

within 2 month(s)
from the above date of mailing

International application No.
PCT/GB2004/001373

International filing date (day/month/year)
30.03.2004

Priority date (day/month/year)
31.03.2003

International Patent Classification (IPC) or both national classification and IPC
C23F11/16

Applicant

MIDDLESEX SILVER CO. LIMITED et al.

1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application
3. The applicant is hereby invited to reply to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 30.07.2005

Name and mailing address of the international preliminary examining authority:



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I. Basis of the opinion

1. With regard to the elements of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, Pages

1-7, 12-35 as originally filed
8-11 received on 18.10.2004 with letter of 13.10.2004

Claims, Numbers

1-23 received on 18.10.2004 with letter of 13.10.2004

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☒ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

see separate sheet

6. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	
Inventive step (IS)	Claims	1-6,15-18
Industrial applicability (IA)	Claims	

2. Citations and explanations**see separate sheet**

**WRITTEN OPINION
SEPARATE SHEET**

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Re Item V.

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

The following documents are referred to in this communication:

- D1: GB-A-1 130 540 (GODDARD & SONS LTD J) 16 October 1968 (1968-10-16)
- D2: US-A-3 503 883 (COX BERNARD CARLTON ET AL) 31 March 1970 (1970-03-31)
- D3: HAN S M ET AL: "FORMATION OF ALKANETHIOL MONOLAYER ON GE(111)" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, XX, XX, vol. 123, 2001, pages 2422-2425, XP001193899 WASHINGTON,US ISSN: 0002-7863
- D4: GB-A-2 255 348 (METALEUROP RECH) 4 November 1992 (1992-11-04)
- D5 WO 02/095082 A (JOHNS PETER GAMON) 28 November 2002 (2002-11-28)

1. The amendments filed with the letter dated 13.10.2004 introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)(b) PCT. The amendments concerned are the following.

- "finished or semi.-finished" in claims 1 and 23
- "between 0.4 and 7 %" in claims 1 and 22
- "mixture" in claim 7. At page 17 line 26 is disclosed "liquid"
- " further comprising an anionic surfactant" inn claim 10. Anionic surfactant is already claimed in claim 7 from which claim 10 depends. Claim 10 should thus be deleted.

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-6,15-18,22 and 23 does not involve an inventive step in the sense of Article 33(3) PCT.

2.1 The document D1 is regarded as being the closest prior art to the subject-matter of

claims 1,22 and 23 and shows (see claims 1-4,9,10,11) the use of alkanethiols or thioglycollates with 12 to 24 carbon atoms in the alkyl chain for treating silver and silver alloys to reduce tarnishing. The subject-matter of claims 1,22 and 23 differs from this known state of the art in that silver alloys containing germanium are treated.

2.2 Regarding the dialkyl disulfides as alternative treating agents, document D2 constitutes the closest prior art and discloses the use of dialkyl disulfides, wherein the alkyl group has 8-22, and preferably 12 to 22, carbon atoms for tarnish prevention of silver (claims 1 and 4).

2.3 With regard to the disclosure of D1 and D2 the problem to be solved by the present invention may be regarded as reducing further the tarnishing. This problem is solved by applying the treatment of D1 and/or D2 to recently developed germanium containing Ag alloys.

The skilled man would anyway use the known silver tarnish preventing treatments, including the ones disclosed in D1 and D2, to improve the tarnish resistance of the recently developed germanium containing Ag alloys (see D4 and D5). The fact that it is known from document D3, that the compounds used in D1 do form a protective layer on germanium is an additional indication that the treatment of D1 is very suitable for the claimed alloys. Therefore, independent claims 1, 22 and 23 lack inventive step.

2.2 Dependent claims 2-6,15-18 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step (Article 33 (3) PCT) because these feature are disclosed in one or more of the above cited documents or because no effect of the claimed feature is shown in the application.

- Claim 2 : see points 2.1 and 2.2 above
- Claim 3 and 4 : D1, example 1 and D2, example 6
- Claim 5 : no effect has been shown of the use of this solvent
- Claim 6 : see D2, example 7
- Claim 15 : see D1, example 1
- Claims 16-18 : known Ge containing silver alloys with improved tarnish resistance (documents D4 and D5)

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3. According to document D2 (see column 3, line 43-46), the chain length of present claim 2 is an essential feature of the invention and should thus be incorporated into the independent claims.